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Quercetin and the Glucosides Inhibit Nitration of a Salivary Component 4-Hydroxyphenylacetic Acid Catalyzed by Salivary Polymorphonuclear Leukocytes

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Mixed whole human saliva contains 4-hydroxyphenylacetic acid (HPA), nitrite and polymorphonuclear leukocytes. Salivary leukocytes nitrated HPA to 4-hydroxy-3-nitrophenylacetic acid in the presence of nitrite, and phorbol myristate acetate stimulated the nitration. Quercetin and the glucosides, which are found in the oral cavity after ingestion of quercetin-rich foods, inhibited the leukocyte-dependent nitration. The inhibition by quercetin and the glucosides was in part due to the flavonol-dependent scavenging of nitrogen dioxide which was formed by myeloperoxidase-dependent oxidation of nitrite. Salivary components, SCN and uric acid, also inhibited the nitration. The above results suggest that quercetin can cooperate with SCN and uric acid to prevent nitration in the oral cavity.

Keywords: [4-hydroxyphenylacetic acid](#), [nitration](#), [quercetin](#), [salivary polymorphonuclear leukocyte](#), [thiocyanate](#), [uric acid](#)

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